Federal Communications Commission (FCC) Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment onto an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Shielded interconnect cables and shielded AC power cable must be employed with this equipment to insure compliance with the pertinent RF emission limits governing this device. Changes or modifications not expressly approved by the system' s manufacturer could void the user' s authority to operate the equipment.

Declaration of Conformity

This device complies with part 15 of the FCC rules. Operation is subject to the following conditions:

- This device may not cause harmful interference, and
- This device must accept any interference received, including interference that may cause undesired operation.

Canadian Department of Communications

This class B digital apparatus meets all requirements of the Canadian Interference-causing Equipment Regulations.

Cet appareil numérique de la classe B respecte toutes les exigences du Réglement sur le matériel brouilieur du Canada.

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INTRODUCTION: ON YOUR MARKS!

Introduction

The CP810-M motherboards feature a socket-370 for the powerful but inexpensive PPGA Celeron processor and the new Intel 810-DC100 chipset that includes an integrated 3D graphics system. The CP810-M is an outstanding platform for Value-class Personal Computer.

Using This Manual

This manual is designed to help you build a reliable Personal Computer based on the CP810-M platform.

Introduction: On Your Marks!

This chapter includes an introduction, a checklist of the items that ship with this motherboard, and a summary of the principal features and components.

Hardware: Get Ready!

This chapter explains how to prepare your motherboard for use, how to install it in a computer case, and how to make the various connections to other computer components and peripheral items.

Firmware: Get Set!

This chapter explains how to use the system setup utility that is stored in the motherboard' s firmware.

Software: Go!

This chapter explains how to install the utility software and drivers that ship with this motherboard.

Checklist

The CP810-M motherboard ships with the following components:

- ❑ CP810-M motherboard
- ❑ One floppy diskette drive ribbon cable
- ❑ One IDE ribbon cable (Ultra DMA 66)
- ❑ One serial port extension bracket
- ❑ One CD-ROM with support software driver
- ❑ One User Manual

If any item is missing, or any item appears damaged, contact your board vendor immediately.

CP810-M Features and Benefits

The CP810-M motherboard supports Intel' s PPGA Celeron processor. The PPGA Celeron is the ideal choice for a powerful but inexpensive Value/entry level personal computer. The CP810-M motherboard features integrated video and audio systems plus an AMR (Audio Modem Riser) slot for the easy installation of a fax/modem.

Processor Information

Single Pentium PPGA S370 Processor 66/100Mhz
1 On-board CPU Fan Header
1 On-board Case Fan Header
VRM Rev. 8.4 components installed on board

PPGA Celerons ship with 32K internal cache memory and 128K of external cache memory, the Celeron processor delivers almost the same performance as a Pentium-II at a lower price.

Chipset Information

CP810-M -Intel 82810-DC100 (66/100 MHz)
Intel 82801AA
NS PC87366 LPC Super I/O Chipset

Intel' s new 810 chipset is designed to lower the cost of performance computing by integrating an AGP 3D graphics system into the chipset and using a shared memory architecture that eliminates the need for dedicated video memory. The Controller Hub uses Accelerated Hub Architecture that effectively doubles the bandwidth between the graphics controller and IDE and PCI buses for more life-like audio and video. The chipset includes an integrated Audio-Codec controller for effective compression and decompression of audio files. The Firmware Hub provides storage for system and video BIOS and includes a random number generator to enable strong encryption routines. The 82810-DC100 chipset on the CP810-M supports 100 MHz display cache memory.

Main Memory

Two 168-pins DIMM Sockets available.
Up to 512MB Memory with or without ECC.
4MB Display Cache

The system supports one or two SDRAM memory modules for a maximum memory of 512 MB. You can install inexpensive modules operating over a 66 MHz memory bus or higher performance PC-100 memory operating over a 100 MHz memory bus. 4 MB Display cache memory can be installed on the CP810-M motherboard for enhanced graphics performance.

BIOS Information

AMI Plug ' n' Play flash BIOS
ACPI / Deep Green / Energy Star / PC97, PC98, and PC99 compliant
Blinking LED for Sleep mode & more
Year 2000 compliant

The system BIOS support automatic detection and configuration of the processor, hardware monitoring, and the Advanced Configuration and Power management Interface (ACPI) specification. It makes for easy configuration, energy-efficient operation, and automatic detection of critical temperatures and voltages.

Disk Drive & System I/O

Onboard Dual Channel Two Ultra DMA 66 PCI Bus-Master IDE Ports
One Floppy Drive Connector Port (Up to 2.88MB)
Two 16550 compatible High Speed Serial Ports
One ECP/EPP High Speed Parallel Port
Four or Two USB Rev 1.0 Ports (**Optional Item)
One SIR/CIR (infrared) Port (shared with serial port COM2/4)
One PS/2 Mouse port and one PS/2 Keyboard port
One Game Port
One line in jack, one line out jack, one microphone jack

The motherboard is installed with a full suite of I/O ports including two PCI IDE channels that support bus mastering Ultra DMA 33/66.

Expansion Slots

Three PCI Slots and an AMR Slot

Three 32-bit PCI slots let you add in a variety of extra features to the system. The AMR slot permits the easy installation of a third-party Audio Modem Riser (AMR) card. The AMR card can be designed and specified to meet the telecommunications regulations for fax/modems in whatever territory you are using the motherboard.

Voltage and Power

ATX Power Supply Connectors
+3.3V for 3.3V PCI, 3.3V components.
+5V for processor VRM, PCI and other 5V components on the motherboard.
+5V dual for 5V based motherboard devices intended to be wakeup devices.
+5V always present standby
+12V Power Source for DC-FAN
+1.8V for MCH, ICH Chipset
+2.5V for CPU CMOS and Clock Generator
+1.5V for CPU GTL+BUS

The system uses an ATX power supply and supports all the power management benefits of the ATX system including a software powerdown, power saving modes, wake-up alarms for modem, network and realtime clock, and so on.

System Management Monitor

NS PC87366 integrated control chip with on-board alarm of heat, fan and voltage.
Reports to the operating system for system monitoring.
Optional Intel LANDesk®Client Manager software

Hardware monitoring lets you set parameters for critical voltages and temperatures inside the system. Using the software provided, you can program the system to alert you when critical parameters are exceeded so that you can take countermeasures.

Physical Dimensions

Micro ATX (9.6" x 7.5")
Double Row ATX Connectors

The micro-ATX format lets you install the motherboard in a variety of small-footprint ATX cases as well as a full-size ATX case.

HARDWARE: GET READY!

Introduction

This chapter is a step-by-step guide that explains how to use your CP810-M motherboard to build a powerful computer system. At a minimum, you will need the following components in order to build a fully functioning system.

- Computer case with ATX power supply
- Intel PPGA Celeron processor
- One SDRAM memory module
- One floppy disk drive
- One UDMA 33/66 IDE hard disk drive
- One CD-ROM drive
- One display monitor
- One PS/2 mouse
- One PS/2 keyboard
- One set of loudspeakers

Of course you can use the system I/O ports and expansion slots to add many more features and components to your system than the essential items listed above.

Safety Measures

Computer components and electronic circuit boards can be damaged by discharges of static electricity. Working on computers that are still connected to a power supply can be extremely dangerous. Follow the simple guidelines below to avoid damage to your computer or yourself.

- Always disconnect the motherboard from the ATX power supply, and disconnect the computer from the power outlet whenever you are working inside the computer case.

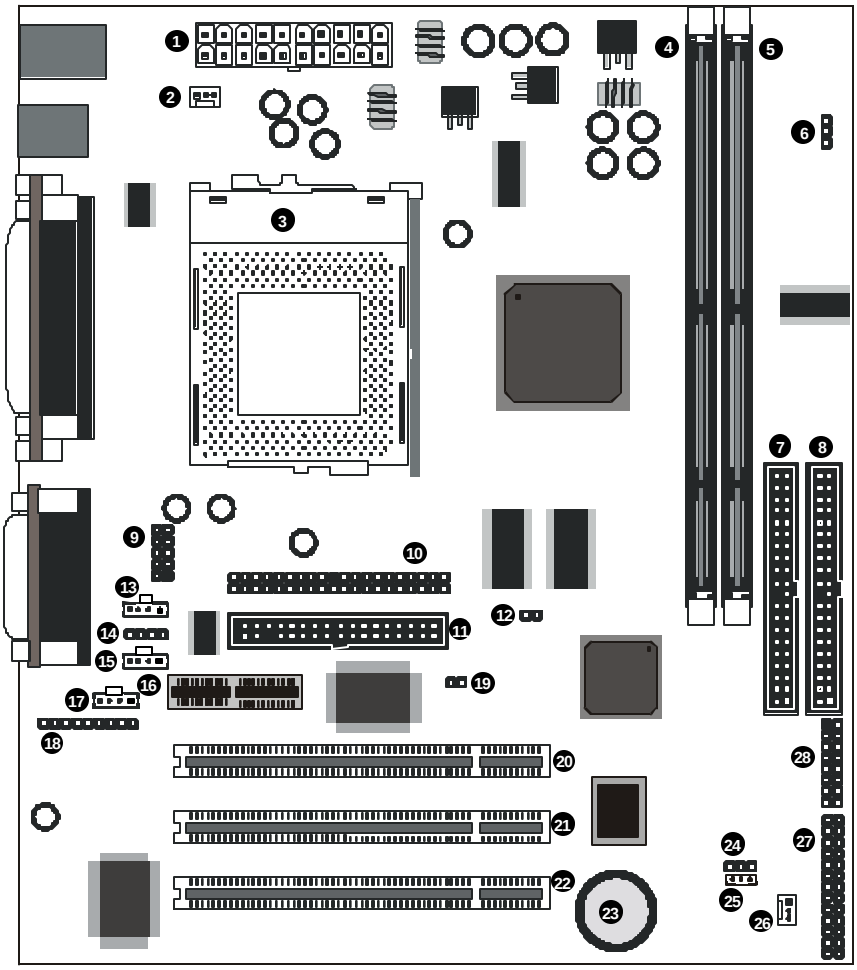
- If possible, wear a grounded wrist strap when you are installing the motherboard or working inside the computer case. Alternatively, discharge any static electricity by touching the bare metal chassis of the computer case, or the bare metal body of any other grounded appliance.

- Hold electronic circuit boards by the edges only. Do not touch the components on the board unless it is necessary to do so. Don' t flex or stress the circuit board.

- Leave all components inside the static-proof packaging that it ships with until you are ready to use the component for the installation.

Motherboard Layout

Use the following illustration and key to identify the major components on the motherboard.



Note: *Because of optional items and design changes, your motherboard may not be identical to the one shown in the illustration.*

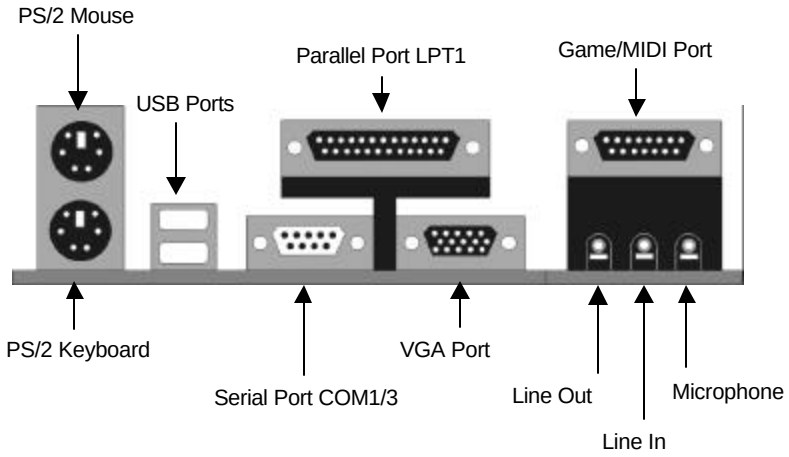
Key to Motherboard Components

Use the table below to identify the main components on the motherboard illustration.

No.	Name	Function
1	J9	Connector for ATX power supply cable
2	FAN1	12V power connector for CPU cooling fan
3	U10	Socket-370 for PPGA Celeron processor
4	DIMM1	Two slots for memory modules
5	DIMM2	
6	JP10	Select system bus frequency jumper
7	J12	Secondary UDMA 33/66 IDE channel connector
8	J13	Primary UDMA 33/66 IDE channel connector
9	COM2	Connector for second serial port COM2/4
10	JP3	Connector for TV or Digital Flat Panel display
11	FDD1	Connector for floppy diskette drives
12	JP11	Select CPU type jumper
13	J4	Audio-in connector for TV-tuner card
14	J3	Audio-in connector for voice modem card
15	J6	Audio-in connector for AUX_IN
16	AMR	Slot for AMR (Audio Modem Riser) card
17	J5	Audio-in connector for CD-ROM/DVD drive
18	JP1	External audio connector
19	JP5	Connector for Case Open Detect circuit
20	PCI1	Three 32-bit PCI expansion slots
21	PCI2	
22	PCI3	
23	BAT1	Backup battery for CMOS memory and realtime clock
24	JP6	Clear CMOS memory jumper
25	J10	Wake on LAN connector
26	FAN2	12V power connector for case cooling fan
27	JP7	Auxiliary USB & PS/2 connector
28	J14	Connectors for case front panel switches and indicators

Input/Output Ports

Like most ATX motherboards, this board is installed with a two-tier row of I/O ports. The illustration below shows a side-on view of the I/O ports.



I/O Port Color Coding

The industry has adopted a standard color code to identify many of the I/O ports used in today' s systems.

Connector	Color
Analog VGA	Blue
Audio line in	Light blue
Audio line out	Lime
Digital monitor / flat panel	White
IEEE 1394	Grey
Microphone	Pink
MIDI/Game	Gold
Parallel	Burgundy
PS/2 compatible keyboard	Purple
PS/2 compatible mouse	Green
Serial	Teal or Turquoise
Speaker out / subwoofer	Orange
Right-to-left speaker	Brown
USB	Black
Video out	Yellow
SCSI, network, telephone, modem, and so on	None

Pre-Installation Procedure

Before you install your motherboard into a computer case, it' s convenient to install the processor, install the memory modules, and set all the jumpers to the correct settings.

Install the Processor

Choosing a Processor

This motherboard has a Socket-370 that can only be installed with an Intel PPGA (Plastic Pin Grid Array) Celeron Processor. Take care that you don' t purchase a SEPP (Single Edge Processor Package) Celeron. Also don' t try to install a socket-7 processor that is similar in design and appearance to the PPGA Celeron.

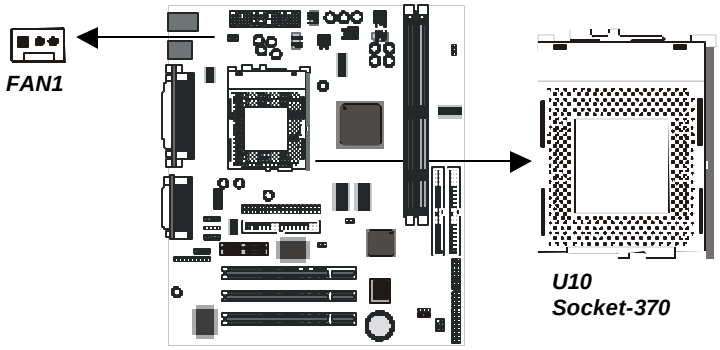
PPGA Celerons have shipped with clock speeds operating over a 66/100 MHz front side bus. All current Celerons are supported by this motherboard. The faster the clock speed of the Celeron processor, the better the performance of your system.

Make sure that your processor includes a heatsink/cooling fan assembly. Today' s high-speed processors must be cooled in order to ensure reliable operation.

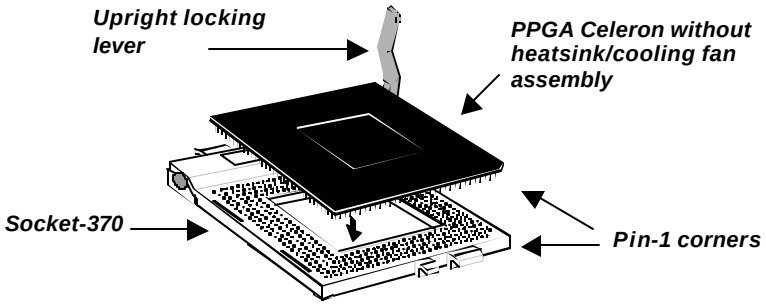
We strongly recommend that you don' t try to run your processor faster than its rated speed. Overclocking can introduce reliability errors and the excess heat generated can damage components.

Installation Procedure

1. On the motherboard, identify the U10 Socket-370 and the cooling fan power supply connector FAN1.



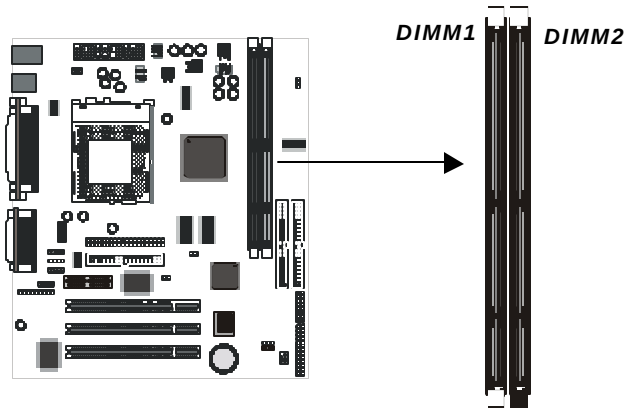
2. Identify the pin-1 corner of the Socket-370. The pin one corner is on the same side as the locking lever, as shown in the illustration below.
3. Identify the pin-1 corner of the Celeron processor. The pin-1 corner on the Celeron has a beveled edge.
4. Pull the locking lever of the Socket-370 away from the socket to unlatch it, and then swing the lever into the upright position.
5. Matching the pin-1 corners, drop the processor into the Socket-370. The processor should drop into place without any force. If it doesn' t seat properly, check that you have the pin-1 corners in the correct position.



6. Swing the locking lever down to lock the processor in place and latch the lever under the catch on the side of the socket.
7. Plug the cable from the heatsink/cooling fan assembly into the processor cooling fan power supply FAN1.
8. Configuration of the processor is carried out using the system setup utility as described in chapter three. Configure the processor the first time you turn on the assembled computer.

Install Memory Modules

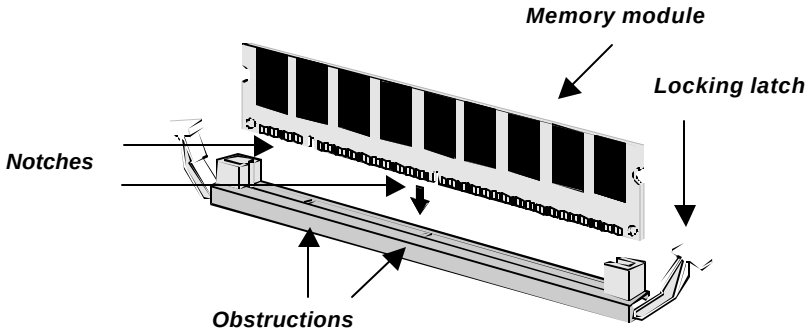
This motherboard has two DIMM (Dual In-line Memory Modules) slots for the installation of memory modules. The memory modules must use 3.3V SDRAM memory chips. This board will support memory modules that use ECC (Error Correction Code) error checking.



We recommend that you install PC-100 modules or faster speed for best performance.

You can install one or two modules. If you install just one module, it makes no difference if you install it in DIMM1 or DIMM2. Each memory module can carry a maximum of 256 MB memory so total maximum memory is 512 MB.

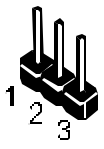
1. On the motherboard, locate the two DIMM slots.
2. Pull the locking latches of the DIMM slot outwards.
3. Align the memory module correctly. The edge connector of the memory module has notches that match obstructions in the slot. You must match the notches with the obstructions in order to install the module.



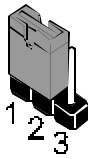
4. Press the edge connector of the memory module into the slot. Press down quite firmly so that the locking latches of the DIMM slot are levered upwards to secure the memory module in place.
5. Repeat the process with any other memory modules that you want to install.

Set the Jumpers

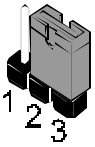
This motherboard has jumpers that need to be set correctly. Jumpers are sets of two, three, or more pins. You can use a jumper cap to connect two adjacent pins. When a jumper cap connects two pins, we say that the pins are SHORT. If you remove a jumper cap from two pins, we say that the pins are OPEN. The examples and illustrations below show the different positions of a jumper cap on a typical 3-pin jumper. By changing the jumper cap, you change the circuits of the motherboard and enable or disable certain features or properties of the board.



3-pin jumper with no jumper cap

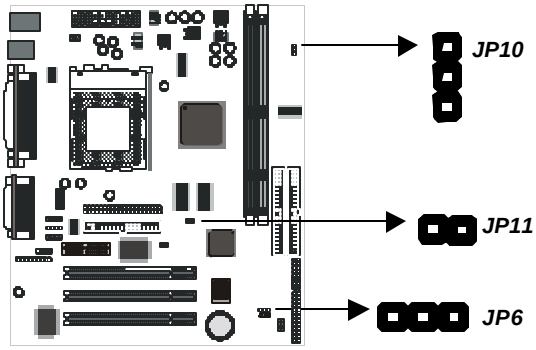


3-pin jumper with pins 1-2 SHORT



3-pin jumper with pins 2-3 SHORT

Locate the jumpers on the motherboard.

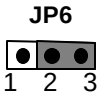


Note: *Default settings are shaded gray in the tables below*

JP6: Clear CMOS memory jumper

Use this 3-pin jumper to clear all the current data stored in the CMOS memory.

Function	Jumper Cap
Clear CMOS	Short pins 1-2
Normal operation	Short pins 2-3



JP11: Select CPU Type jumper

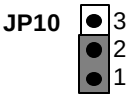
This 2-pin jumper is used to select the CPU type. Since this mainboard only supports PPGA Celeron processor, always leave this jumper in the default closed position

Function	Jumper Cap
Pentium-II, Celeron	Short pins 1-2
Pentium-III	Open pins 1-2

JP10: Set System Bus Frequency

Use this 3-pin jumper to set the system bus frequency. In the normal setting, the system automatically selects the correct frequency according to the kind of processor installed. In the Force 100 MHz or Force 66 MHz setting, the system uses a 100 MHz or 66 MHz system no matter what the correct system bus for the installed processor may be.

Function	Jumper Cap
Normal operation	Short pins 1-2
Force 66 MHz	Short pins 2-3
Force 100 MHz	Open all pins



Install the Motherboard in a Computer Case

After you have prepared the motherboard by installing a processor, one or more memory modules, and have set the jumpers correctly, install the board into a computer case and begin connecting essential peripheral items to the connectors on the motherboard.

Choosing a Computer Case

This is a micro-ATX motherboard. It must be installed in a case that uses an ATX power supply. Some small-footprint cases are specially designed for micro-ATX motherboards. Make sure that the computer case has a two-tier I/O template on the rear side that matches the two-tier I/O port array on this board.

This board can support two floppy diskette drives and four IDE devices, so you might want to choose a case that allows you to install a full complement of six devices. Make sure that the case power supply unit has enough capacity to power all the drives that you plan to install.

Follow the instructions given with the computer case to install the board onto the mounting brackets inside the case. The motherboard has several holes drilled through it, and you should be able to drive a screw through some of these holes into the mounting brackets in the case. Don' t overtighten the screws as this can stress the motherboard.

Connecting the Case Components

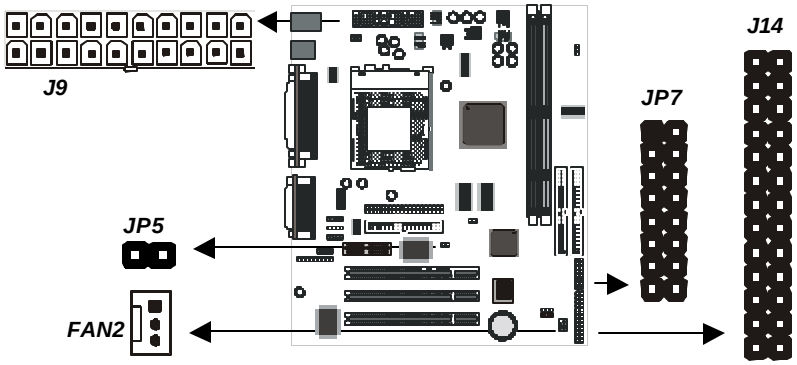
Most computer cases include a power supply unit, power and reset switches and indicators, and frequently a chassis cooling fan. Some cases also have a case open detect alarm.

This motherboard has PS/2 and USB ports installed on the rear edge I/O port array. However, some kinds of computer case have a special module that mounts the PS/2 and USB ports on the front side of the case. If you have this kind of case and **4 USB ports motherboard (**the 4 USB ports are optional item for CP810-M mainboard), you can use the auxiliary USB & PS/2 connector JP7 to connect the front-mounted ports to the motherboard. When you use the JP7 connector, you can use either the front-mounted PS/2 ports or the rear-mounted PS/2 ports, but not both. If your motherboard supports four USB ports,

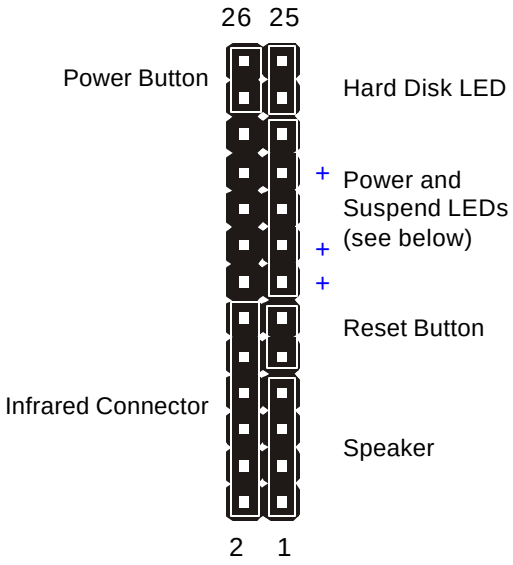
you can use both the front and rear-mounted USB ports at the same time .

Note: *Make sure that the power supply unit in the case is not connected to a power outlet while you are carrying out the installation procedure.*

1. On the motherboard, locate the power connector J9, the switches and indicators connector J14, the chassis cooling fan power connector FAN2, the case open detect connector JP5, and the auxiliary USB and PS/2 ports connector JP7.



2. Plug the main power supply cable from the case power supply unit into the J9 ATX connector on the motherboard.
3. If your computer case has a chassis cooling fan, plug the power cable of the cooling fan into the cooling fan power connector FAN2.
4. If your computer has a module with PS/2 and USB ports, connect the cable from the module to the auxiliary PS/2 and USB ports connector JP7. Note that if you use the JP7 connector you can use either the front-mounted PS/2 ports or the rear-mounted PS/2 port, but not both. If your motherboard supports four USB ports, you can use both the front and rear-mounted USB ports at the same time.
5. If your case has a " case open detect' alarm, connect the cable from the alarm to the case open detect connector JP5.
6. Locate the J14 switches and indicators connector on the motherboard. Begin connecting the case switches and indicators to the appropriate pins on the J14 connector. Use the illustration and tables below to make the correct connections.



Connecting Power and Suspend LEDs

One 3-pin cable with dual colors for Power & Suspend LEDs (*2)	Connect to pins 15-17-19
One 3-pin cable with single color for Power LED only (*1)	Connect to pins 15-17-19
One 2-pin cable for Power LED & one 2-pin cable for Suspend LED (*1)(*2)	Connect Power to pins 15-17 Connect Suspend to pins 19-21
One 3-pin cable for Power LED & one 2-pin cable for Suspend LED (*1)(*2)	Connect Power to pins 13-15-17 Connect Suspend to pins 19-21

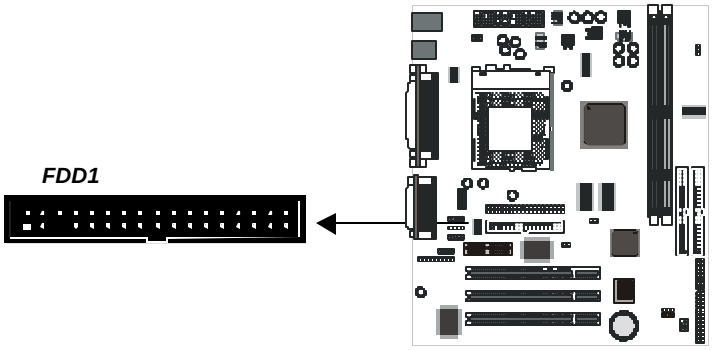
Note: *1 BIOS Menu Setting "Power LED State" selects " Always On", the others should have "Suspend Off" selected.
*2 BIOS Menu Setting "Suspend LED State" selects "Always On", the others should have "Pulse Trigger"selected.

Floppy Diskette Drive

The motherboard has a floppy diskette drive interface that will support one or two floppy disk drives. The floppy diskette drive ribbon cable has connectors for two 3.5" wide diskette drives.

Note: *The pin-1 side of the floppy diskette drive ribbon cable is marked with a red stripe.*

1. Install the floppy diskette drive into a suitable drive bay in your computer case.



2. Locate the floppy diskette drive connector on the motherboard. The connector is named FDD1. Plug one end of the floppy diskette drive ribbon cable into FDD1. Plug one of the other connectors into the data connector on the rear edge of the floppy diskette drive.
3. Plug a free power supply cable from the case power supply unit into the power connector on the rear edge of the floppy diskette drive.
4. When you start up your assembled computer, the floppy diskette drive will be identified as drive A. If you have installed two drives on the cable, they will be identified as drives A and B.
5. Run the setup utility to configure the floppy diskette drives. See the following chapter for more information.

IDE Devices

The motherboard has two IDE channel connectors; the Primary IDE channel (J13), and the Secondary IDE channel (J12). Each IDE channel can support two devices. IDE devices include hard disk drives, CD-ROM drives, and removable media drives such as ZIP drives and LS-120 drives.

Typically, most people install one IDE hard disk drive and one IDE CD-ROM drive so this motherboard ships with one IDE cable. You can easily obtain a second IDE cable if you want to install more than two IDE devices.

Note: *The pin-1 side of the IDE ribbon cable is marked with a red stripe.*

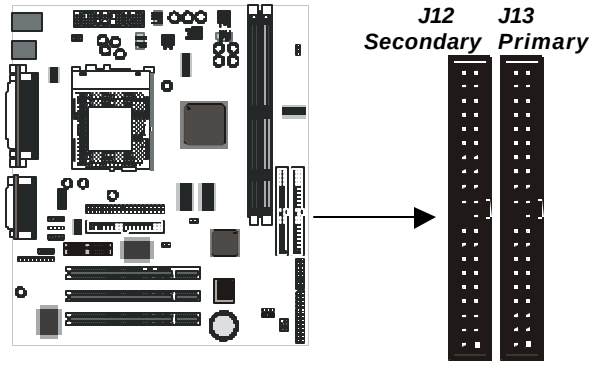
Master & Slave

When you install two devices on a single IDE channel, you must configure one of the devices as a MASTER device and one of the devices as a SLAVE device. These configurations have no effect on performance and are just a naming convention so that your computer system can distinguish between the two devices on the same channel.

All IDE devices have documentation that tells you how to set the device as MASTER or SLAVE. Normally you do this by changing a jumper on the rear edge of the device. If you are installing two devices on the IDE ribbon cable, configure one device as MASTER and one device as SLAVE before you begin.

Installing the Device

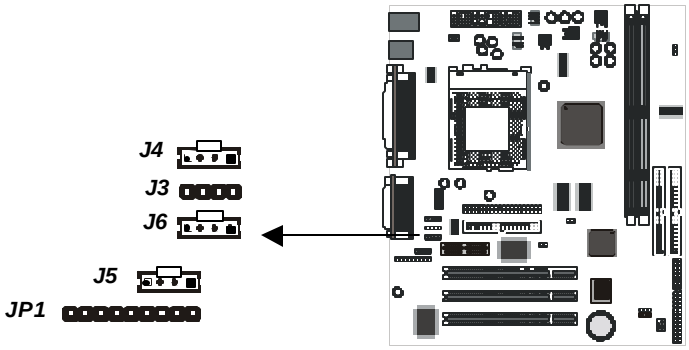
1. Install the IDE device(s) into a suitable drive bay in your computer case.
2. Locate the Primary IDE channel connector on the motherboard. The connector is named J13. Plug one end of the IDE cable into J13. Plug one of the other connectors into the data connector on the rear edge of the IDE device. If you are installing two devices, plug the other connector into the data connector on the rear edge of the second device.



3. Plug a free power supply cable from the case power supply unit into the power connector on the rear edge of the IDE device(s).
4. When you start up your assembled computer, an IDE hard disk drive on the primary IDE channel is identified as drive C. A second IDE drive on the primary IDE channel is identified as drive D.
5. Run the setup utility to configure the installed IDE devices. The setup utility can automatically configure most IDE devices, See the following chapter for more information.
6. If you have installed a CD-ROM (or DVD) drive, you need to connect the audio output of the drive to the sound system integrated on the motherboard. This procedure is explained in the following section Audio Connections.

Audio Connections

You can connect the audio output from your CD-ROM (or DVD) drive into one of the audio input connectors on the motherboard. The board has four kinds of audio input connector for different devices.



Use either J5 or J6 to connect the audio output from a CD-ROM or DVD drive.
Use J4 to connect the audio output from a TV tuner card/
Use J3 to connect the voice output from a voice modem card.

JP1 Auxiliary Audio Connector

On this motherboard, the sound jacks for Line-in, Line-out, and Microphone are located on the rear edge of the board. On some computer cases, the audio jacks are pre-installed in the system chassis. If you have this kind of computer case, connect the case audio jacks to the auxiliary audio connector JP1. Note that you can use either set of audio jacks at the same time.

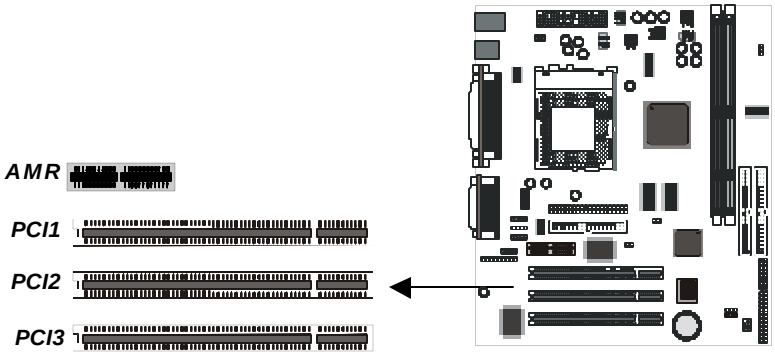
Installing Expansion Cards

This motherboard has one AMR slot and three 32-bit PCI slots.

- The AMR (Audio Modem Riser) slot supports an Audio Modem Riser Card. The AMR slot is designed to overcome the problem that different territories have different regulatory requirements for a fax/modem. You can use the AMR slot to easily install an Audio Modem Riser card that is approved for use in your location.
- The PCI slots support current add-in cards which have a 32-bit PCI (Peripheral Components Interconnect) edge connector.

Note: To ensure your system' s stability, please verify that the PCI add-in cards you are using support ACPI Power Management functions. If they do not support ACPI, do not enter S3 or S4 suspend mode.

Locate the expansion slots on the motherboard.

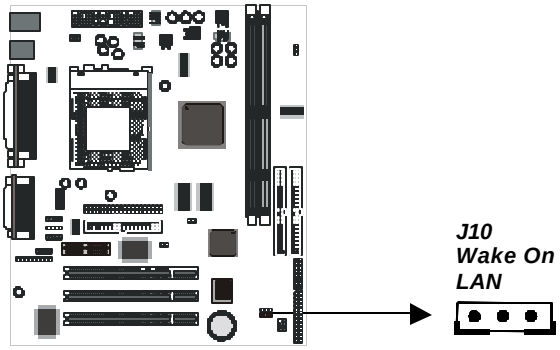


1. Select which slot you plan to use according to the kind of add-in card you are going to install.
2. In the computer case, remove the blanking plate from the opening in the case adjacent to the slot you are going to use.
3. Hold the edge connector of the add-in card directly over the slot that you are going to use. The metal bracket on one edge of the add-in card fits into the opening from which you removed the blanking plate.

4. Carefully press the card down so that the edge connector installs into the expansion slot. You might need to rock the card slightly to make sure that the edge connector is seated properly into the slot.
5. Drive a screw through the metal bracket on the edge of the card to secure it in place. The opening in the case has a screw available on the top of the opening.

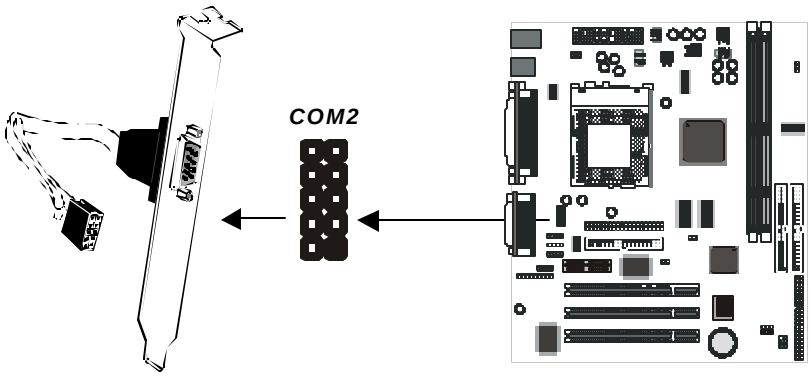
Add-in Card Options

This motherboard has a Wake On LAN feature. If you have installed a network (LAN) adapter expansion card, you can connect the card to the Wake On LAN connector J10. If your system is in a software power down or a power-saving mode, incoming traffic to the network adapter can resume the system. You might have to enable this feature using the system setup utility. See the following chapter for more information.



Optional Second Serial Port

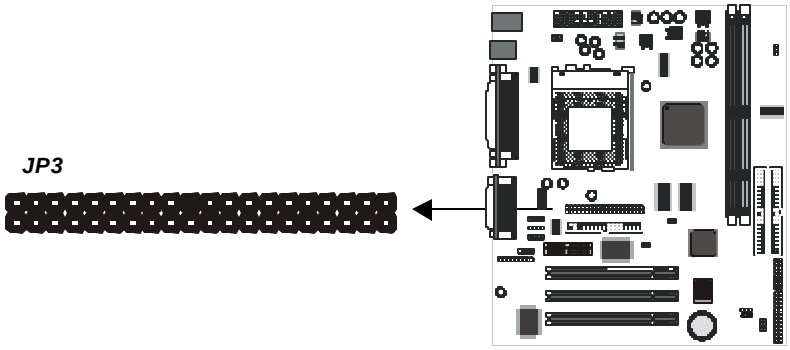
This motherboard is installed with a serial port (COM1/3) on the rear edge of the board. You might want to install a second serial port (COM2/4) using the supplied serial port bracket. If you install this option, connect the cable from the second serial port to the serial port connector COM2 on the motherboard.



Note: *A second serial port may require system resources that are also required by an optional infrared port or even a fax/modem. If you install a second serial port, you may not be able to use it at the same time as an infrared port or a fax/modem. You may be able to resolve the resource sharing problem by making changes to the system setup utility or by making configuration changes with the Device Manager of the installed operating system*

TV or Digital Flat Panel Connector

This motherboard has an analog (VGA) display monitor connector on the rear edge. However, your motherboard supports an alternative video output to a TV or digital flat panel which is optional through the JP3 connector on the board. If you want to use this option, you can connect a bracket with digital video connectors to JP3.



FIRMWARE: GET SET!

Introduction

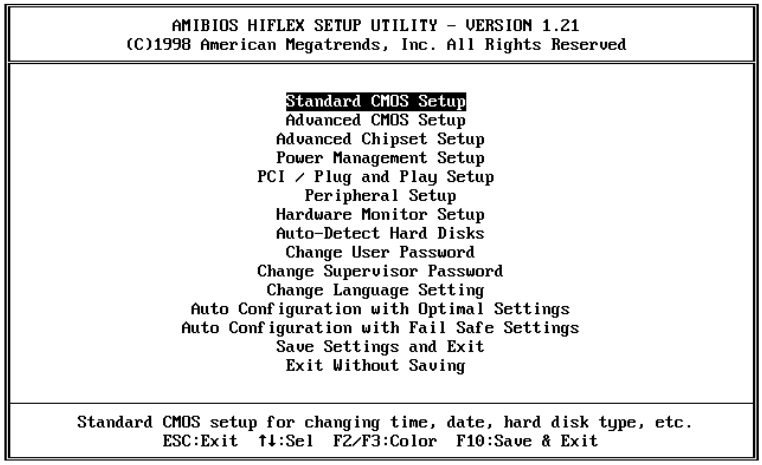
This chapter explains how to use the system setup utility that is stored in the system BIOS. The setup utility is like a database of the hardware that is installed in your computer. It contains information about the configuration of the hardware, how you want the hardware to operate, the current date and time, and so on.

When you have assembled your computer, you should immediately run the setup utility to configure the new hardware that you have used to build your system. Thereafter, you may not need to visit the setup utility again unless you make changes to the hardware configuration of the system.

If you are not sure how to configure the setup utility, we suggest that you select *Auto Configuration with Optimal Settings* on the Main Menu screen, then exit saving changes. This loads optimized default settings for normal use.

Running the Setup Utility

To run the setup utility immediately when booting your system, press the **Delete** key when the Q-lity Logo screen appears. If you prefer first to jump to the BIOS POST screen from the Logo screen, press the **Tab** key to do so. To run the setup utility from the BIOS POST screen, press the **Delete** key when prompted to enter the Main Menu.

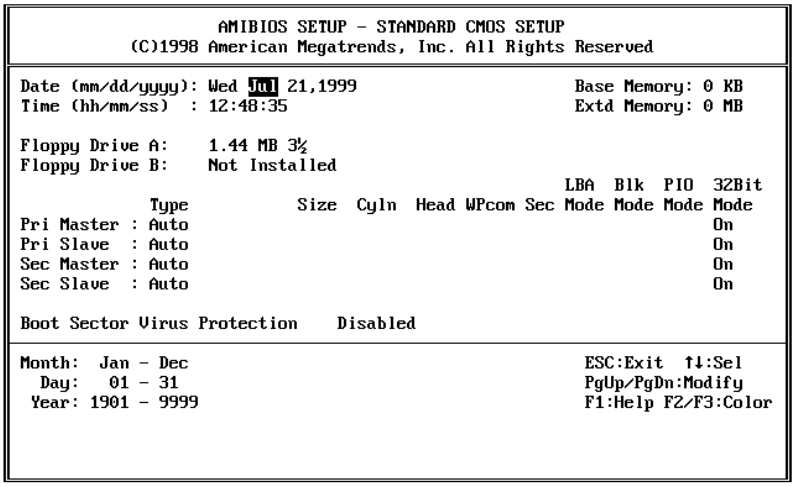

AMIBIOS HIFLEX SETUP UTILITY - VERSION 1.21
(C)1998 American Megatrends, Inc. All Rights Reserved
Standard CMOS Setup
Advanced CMOS Setup
Advanced Chipset Setup
Power Management Setup
PCI / Plug and Play Setup
Peripheral Setup
Hardware Monitor Setup
Auto-Detect Hard Disks
Change User Password
Change Supervisor Password
Change Language Setting
Auto Configuration with Optimal Settings
Auto Configuration with Fail Safe Settings
Save Settings and Exit
Exit Without Saving
Standard CMOS setup for changing time, date, hard disk type, etc.
ESC:Exit ↑↓:Sel F2/F3:Color F10:Save & Exit

You can use the cursor arrow keys to highlight any of the options on the Main Menu page. Press **Enter** to select the highlighted option. To leave the setup utility, press the **Escape** key. Press **F2** or **F3** to cycle through the different color schemes for the setup utility. Press **F10** to open a dialog box that lets you save changes and exit the setup utility.

Some of the options on the Main Menu page lead to tables of items with installed values. In these pages, use the cursor arrow keys to highlight the items, and then use the **PageUp** and **PageDn** keys to cycle through the alternate values for each of the items. Other options on the Main Menu page lead to dialog boxes that require you to answer Yes or No by hitting the **Y** or **N** keys.

Standard CMOS Setup Page

Use this page to set basic information such as the date and time, the IDE devices, and the diskette drives.


AMIBIOS SETUP - STANDARD CMOS SETUP
(C)1998 American Megatrends, Inc. All Rights Reserved
Date (mm/dd/yyyy): Wed Jul 21,1999
Time (hh/mm/ss) : 12:48:35
Base Memory: 0 KB
Extd Memory: 0 MB
Floppy Drive A: 1.44 MB 3½
Floppy Drive B: Not Installed
Type Size Cyln Head WPcom Sec LBA Mode Blk Mode PIO Mode 32Bit Mode
Pri Master : Auto On
Pri Slave : Auto On
Sec Master : Auto On
Sec Slave : Auto On
Boot Sector Virus Protection Disabled
Month: Jan - Dec
Day: 01 - 31
Year: 1901 - 9999
ESC:Exit ↑↓:Sel
PgUp/PgDn:Modify
F1:Help F2/F3:Color

Date & Time

Use these items to install your system with the correct date and time

Floppy Drive A & Floppy Drive B

If you have just one floppy drive installed change the item Floppy Drive A so that it describes the characteristics of the drive. If you have a second floppy drive, do the same for Floppy Drive B

Primary Master/Primary Slave/Secondary Master/Secondary Slave

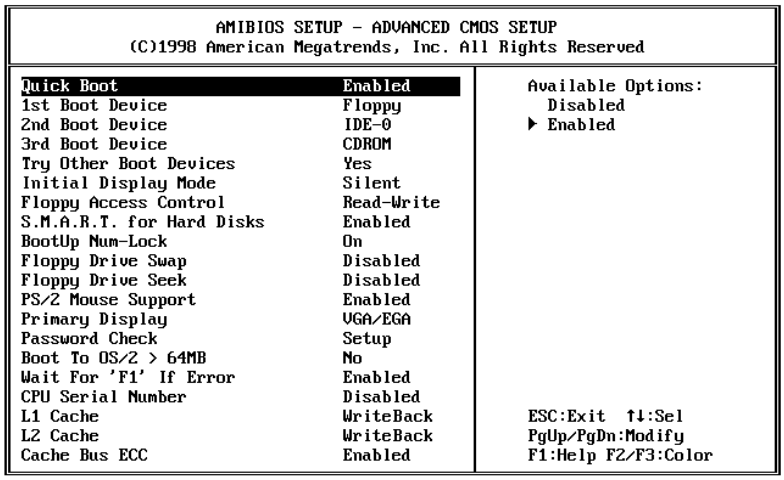
These items show the characteristics of any devices on the four available IDE channels. You can automatically install most modern hard disks using the Auto-Detect Hard Disks Option from the main menu. If you can' t auto-detect a drive, you might be able to find a preset type from 1-46 that matches your hard disk. Or, you can set the item to User, and manually enter the characteristics of the drive in the columns marked Size, Cyln (cylinders), Head (drive heads), etc. You can also set these items to configure other kinds of IDE devices such as CD-ROM or Floptical.

Boot Sector Virus Protection

Enable this item to provide some protection against viruses that attack the boot sector of a hard disk. You need to disable this item until you have installed an operating system on the hard disk.

Advanced CMOS Setup Page

This page lets you make some changes to the basic operation of your computer.



Quick Boot

If you enable this item, the system eliminates some of the power on test routines so that the start-up time is quicker.

1st/ 2nd/3rd Boot Device

Use these 3 items to determine where and in which order the system will look for a bootable operating system each time it is started.

Try Other Boot Devices

If you enable this item, the system will continue looking for an operating system in any other installed devices if it fails to find a bootable OS in the four devices already specified.

Initial Display Mode

This item determines the appearance of the system at start-up time. If the value is set to BIOS, the results of the POST (Power On Self Test) ar displayed. If the value is set to Silent, a Logo screen is displayed.

Floppy Access Control

This option lets you define the operation of floppy disk drives as Read-Only or Read-Write.

S.M.A.R.T. for Hard Disks

SMART is an industry acronym for Self-monitoring, Analysis and Reporting Technology. If the documentation of your hard disk states that SMART is supported, you can enable this item.

BootUp Num-Lock

If you enable this item, the Num Lock key is activated each time the system is started.

Floppy Drive Swap

If you have two floppy diskette drives installed, you can use this item to change the drive letter assignments so that drive A becomes drive A and drive B becomes drive A.

Floppy Drive Seek

If you enable this item, the system will check the geometry of the floppy disk drives at start up time. You only need to enable this item if you have a legacy 5.25" floppy diskette drive with a 360K capacity.

PS/2 Mouse Support

Enable this item if you plan on using a mouse or trackball with a PS/2 interface.

Primary Display

Use this item to define the type of monitor you are using. You should leave this item at the default value VGA/EGA.

Password Check

If you have installed password protection, use this item to determine if the password is required at start-up (Always) or on entry to the setup utility (Setup).

Boot to OS/2 > 64MB

Enable this item if you are running OS/2 and you have installed more than 64 MB memory.

Wait For F1 If Error

If you enable this item and the system finds an error during the start up testing, it will display a prompt asking you to press F1 to continue.

CPU Serial Number

Some new processors (for example the Pentium-III) are installed with a unique serial number that can be used to validate internet transactions and so on. If you don' t want to use this number, disable this item.

L1 Cache

All the processors that can be installed in this mainboard have level 1 cache memory so you should set this item to WriteBack.

L2 Cache

If you are using a processor that has built-in level 2 cache memory, or if the motherboard is installed with level 2 cache memory, set this item to WriteBack.

Cache Bus ECC

Enable this item if the cache memory supports ECC (Error Correction Code) error correction.

System BIOS Cacheable

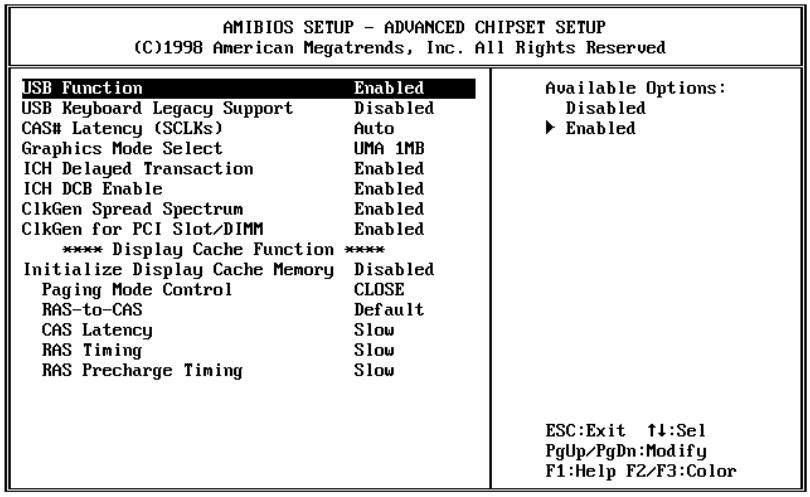
If you enable this item, the system BIOS is copied to main memory for faster execution.

C000,64K Shadow, D000,64K Shadow

These items determine how the 32K of video ROM at address C000h is treated. If you disable both items, the video ROM is not copied to main memory. If you enable C000, 16K of the video ROM is copied to main memory. If you enable C000 and D000, 32K of the video ROM is copied to main memory. If you set the items to Cached, the video ROM is copied to main memory and it can be cached in the cache memory as well for faster execution.

Advanced Chipset Setup Page

This page lets you make some advanced changes to the operation of your computer.



USB Function

Enable this item if you plan to use the Universal Serial Bus ports on this motherboard.

USB Keyboard Legacy Support

Enable this item if you plan to use a keyboard with a USB interface.

CAS# Latency (SCLKs)

This item sets a timing parameter for the Column Address Strobe memory access. Leave this item at the default value Auto so that the system auto-detects the correct timing.

Graphics Mode Select

This motherboard has a built-in graphics system that uses UMA (Unified Memory Architecture) so that the graphics reserves a part of main memory for video memory. Use this item to determine how much of the main memory can be used as video memory.

ICH Delayed Transaction

This item determines if the ICH (I/O Controller Hub) Bus Master transaction is enabled or disabled. System performance is slightly impaired when this item is enabled.

ICH DCB Enable

DCB stands for DMA Collection Buffer. When this item is enabled, the I/O Controller Hub allows DMA collection buffering to reduce the DMA collection rate.

ClkGen Spread Spectrum

If you enable spread spectrum, the EMI (electromagnetic interference) generated by the system is greatly reduced.

ClkGen for PCI Slot/DIMM

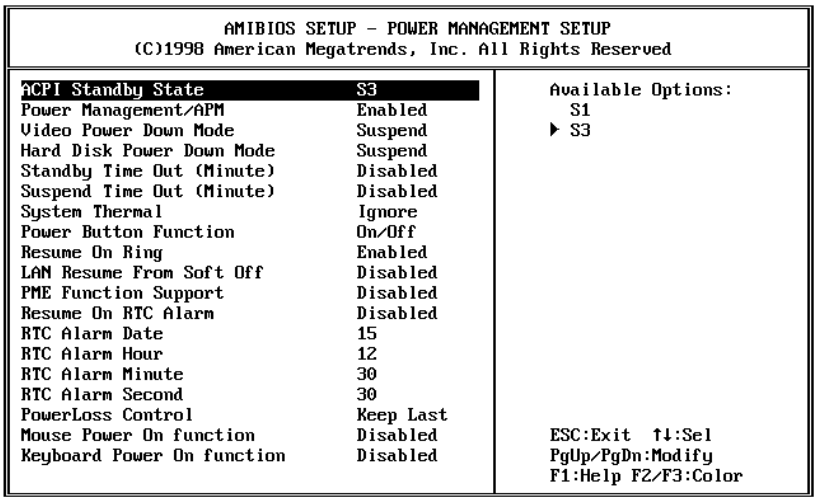
If you enable this item, the system does not generate clock signals for unused PCI or DIMM slots, so that EMI (electromagnetic interference) is reduced.

Initialize Display Cache Memory

This item and the items below set the parameters for display cache memory if you have display cache installed. Leave these items at the default values.

Power Management Setup Page

This page sets some of the parameters for the system power management operation. The motherboard supports ACPI suspend modes S1, S3, and S4. You can enter S1 and S3 using the standby function of an ACPI operating system. For Windows 98, to enter S4 (suspend-to-disk) you need to prepare your hard disk drive using HDPREP.EXE.



ACPI Standby State

Use this item to define the nature of the ACPI standby power-saving mode as S1 or S3. S1 is a power-saving mode in which the CPU clock is halted, the VGA controller is powered down, and etc. S3 is a suspend to RAM mode in which only the contents of system memory are refreshed.

Power Management/APM

If you enable this item, it allows operating systems, such as Win95/98 that have APM (Advanced Power Management) to assume control over some of the power management operations on your system.

Video Power Down Mode

Use this item to determine which level of power-saving mode is required to cause a power down of the video system.

Hard Disk Power Down Mode

Use this item to determine which level of power-saving mode is required to cause a power down of the hard disk drive.

Standby Timeout (Minute)

Use this item to set a timeout (in minutes) for the Standby power-saving mode or disable the timeout. If the system is idle for the duration of the timeout, the system will automatically enter standby mode.

Suspend Timeout (Minute)

Use this item to set a timeout (in minutes) for the Suspend power-saving mode or disable the timeout. If the system is idle for the duration of the timeout, the system will automatically enter suspend mode.

System Thermal

If you enable this item, and your motherboard is installed with hardware monitoring, the system will monitor the heat output of the system.

Power Button Function

If this item is set to ON/OFF, the power button acts as a standard on off switch. If you set this item to suspend, pressing the power button puts the system into a power-saving suspend mode.

Resume on Ring

If this item enabled, an incoming call to an external modem can resume the system from a software power down or a power-saving mode.

LAN Resume From Soft Off

If this item enabled, incoming traffic to a network (LAN) adapter can resume the system from a software power down or a power-saving mode. You might need to make a hardware connection from the LAN adapter to a wake-on-LAN connector on the motherboard for this feature to operate.

PME Function Support

The PME (Power Management Event) function complies with the PCI Specification 2.2. It allows PCI devices to issue a PME signal via the PCI bus to generate a system wakeup event.

Resume On RTC Alarm

If this item is enabled, you can set an alarm on the system RTC (realtime clock) that will resume the system from a software power down or a power-saving mode. Use then items below to set the Alarm Date, Hour, Minute and Second.

PowerLoss Control

This sets the power state after a shutdown due to an unexpected interrupt of AC power. If the value is set to ON, the system turns back on. If the value is set to OFF, the system remains turned off. If the value is set to KEEP LAST, the system returns to the last power state, for example a suspend mode or other power-saving mode.

Mouse Power On Function

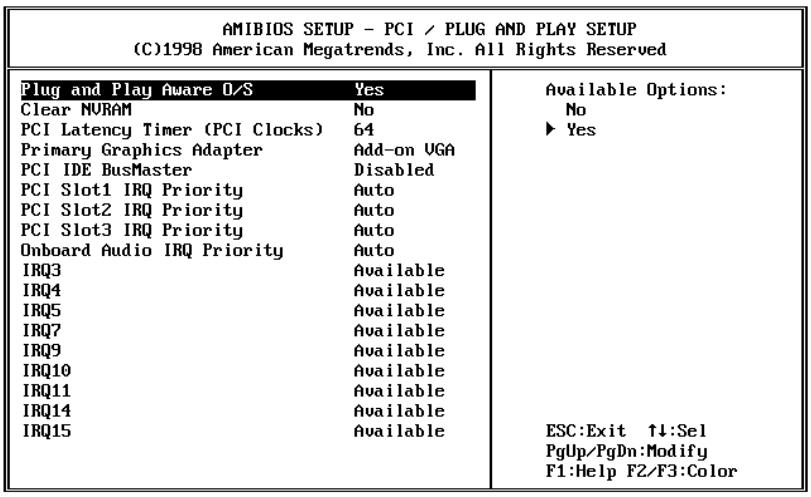
If you enable this item, you can turn on the system from a software power down by double-clicking the mouse button.

Keyboard Power On Function

If you enable this item, you can turn on the system from a software power down by hitting specific keys on the keyboard.

PCI / Plug and Play Setup Page

This page lets determine how the system handles plug and play devices and devices on the PCI bus.



Plug and Play Aware O/S

Set this item to Yes if you are using an operating system that supports Plug and Play such as Windows 95/98.

Clear NVRAM

The system BIOS stores information about the configuration of plug and play devices in NVRAM (Non-Volatile Random Access Memory). If you set this item to Yes, the current information is deleted, and new information is created the next time the system is booted.

PCI Latency Timer (PCI Clocks)

This item sets a timing parameter for the PCI bus. Since this item is determined by the system hardware, leave this at the default value.

Primary Graphics Adapter

Use this item to determine if your primary graphics adapter is integrated on the motherboard or installed on an add-in graphics card.

PCI IDE BusMaster

Use this item to enable or disable PCI bus mastering for devices on the PCI IDE channels. You might need to install bus mastering drivers for this feature to function.

PCI Slot1 IRQ Priority
PCI Slot2 IRQ Priority
PCI Slot3 IRQ Priority
Onboard Audio IRQ Priority

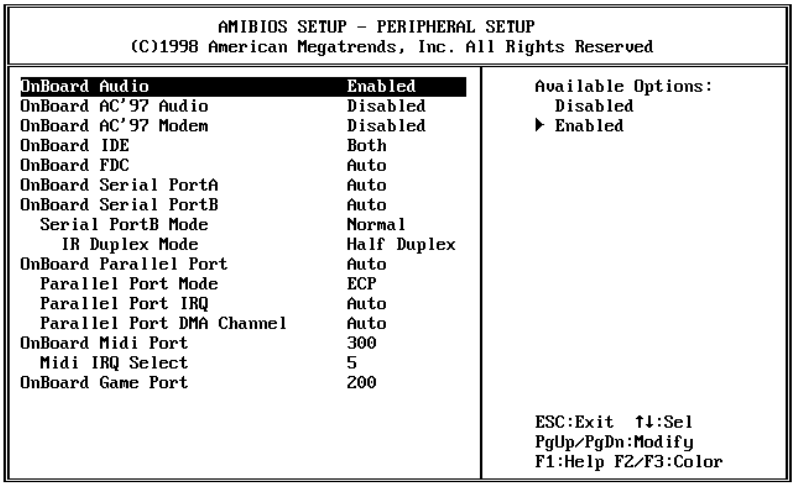
Use these items to assign priority allocation of an IRQ (interrupt request line) to devices installed in each of the PCI channels and the onboard PCI audio system. We recommend that you set these items to Auto.

IRQ3.....IRQ15

These IRQs are set to Available as a default so that the Plug and Play manager can dynamically allocate them as and when they are required. If you set an IRQ to No Use, it is reserved and cannot be allocated by the Plug and Play manager.

Peripheral Setup Page

Use this page to set parameters for some of the peripheral items on your system.



Onboard Audio

Use this item to enable or disable the onboard audio system integrated on this motherboard.

Onboard AC'97 Audio
Onboard AC'97 Modem

Use this item to enable or disable the audio and modem codec (compression-decompression) chips that are integrated on this motherboard.

Onboard IDE

Use this item to enable or the primary and secondary IDE channels that are integrated on this motherboard.

Onboard FDC

Use this item to enable or disable the floppy diskette drive interface that is integrated on this motherboard.

Onboard Serial Port A
Onboard Serial Port B

Use these items to disable the serial ports or to assign a port address and name to the ports. We recommend that you set these items to Auto so that the system can dynamically assign port addresses and names.

Serial Port B Mode

If you set this item to normal, serial port B remains a regular serial port. If you set this item to Sharp-IR or IrDA, the resources of serial port B are assigned to the infrared port that is an optional item on this motherboard.

IR Duplex Mode

If you have assigned serial port B to the infrared port, use this item to determine if the infrared port can use full-duplex or half-duplex transmission.

Onboard Parallel Port

Use this item to disable the parallel port or assign a port address to the parallel port. We recommend that you set this item to Auto so that the system can dynamically assign a port address.

Parallel Port Mode

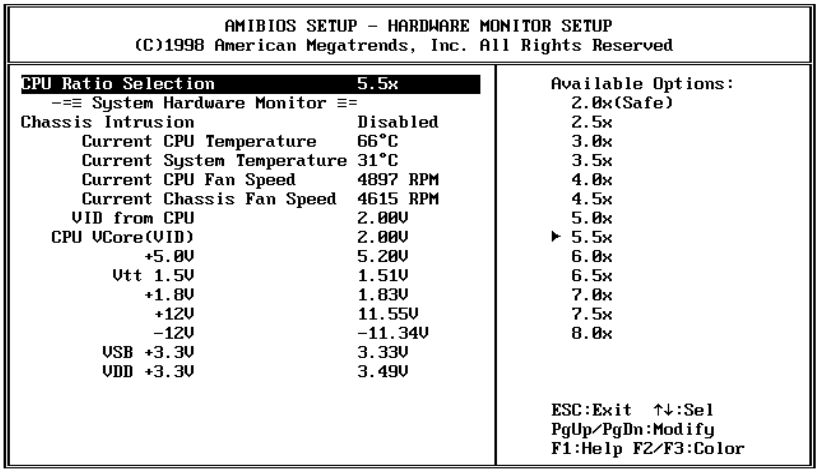
Use this item to determine the mode of the parallel port. You can select Normal, Bi-directional, EPP 1.9 or 1.7 (Enhanced Parallel Port) or ECP (Extended Capabilities Port).

Parallel Port IRQ
Parallel Port DMA Channel

These items are Not Available in most circumstances. If they are available, use then to allocate an IRQ and DMA (Direct Memory Access) channel for the parallel port.

Hardware Monitor Setup Page

This page lets you install hardware monitoring parameters so that the system can warn you when critical parameters are exceeded.



CPU Ratio Selection

Use this item to select a multiplier for the system front side bus frequency. The value of the multiplier must be set so that **Multiplier x Front Side Bus Frequency = CPU Clock Speed** For example, if you have a processor that is rated to run at 450 MHz and the system is running a front side bus frequency of 100 MHz, you should select a multiplier of 4.5 so that:

4.5 (Multiplier) x 100 MHz (front side bus) = 450 MHz (CPU clock)

Chassis Intrusion

If your system case has a case open detect circuit and you have connected it to the case open detect connector on the motherboard, you can use this item to enable or disable the circuit.

Current CPU Temperature….and following items

If your motherboard supports hardware monitoring, these items are auto-detected and the results are reported. You cannot make changes to these items.

Auto Detect Hard Disks

This item automatically detects and installs any hard disk drives installed on the primary and secondary IDE channels. Most modern drives can be detected. If you are using a very old drive that can' t be detected, you can install it manually.

Setup will check for two devices on the primary IDE channel and then two devices on the secondary IDE channel. At each device, the system will flash an **N** in the dialog box. Press **Enter** to skip the device and proceed to the next device. Press **Y**, then **Enter** to tell the system to auto-detect the device.

Change User/Supervisor Password

You can install a Supervisor password, and if you install a supervisor password, you can then also install a user password. A user password does not provide access to many of the features in the setup utility.

If you highlight these items and press **Enter**, a dialog box appears which lets you enter a password. You can enter no more than six letters or numbers. Press **Enter** after you have typed in the password. A second dialog box asks you to retype the password for confirmation. Press **Enter** after you have retyped it correctly. The password is required at boot time, or when the user enters the setup utility.

Change or Remove the Password

Highlight this item and type in the current password. At the next dialog box, type in the new password, or just press **Enter** to disable password protection.

Auto Configuration with Optimal Settings

If you highlight this item and press **Enter**, a dialog box asks if you want to install optimal settings for all the items in the setup utility. Press the **Y** key to indicate Yes, and then press **Enter** to install the optimal settings.

The optimal settings default values are quite demanding and your system might not function properly if you are using slower memory chips or other kinds of low-performance components.

Auto Configuration with Fail Safe Settings

If you highlight this item and press **Enter**, a dialog box asks if you want to install fail safe settings for all the items in the setup utility. Press the **Y** key to indicate Yes, and then press **Enter** to install the fail safe settings.

The fail safe settings default values are not demanding so a system should be able to operate with the fails safe settings even if it is installed with slower memory chips or other kinds of low-performance components.

Save Settings and Exit

Highlight this item and press **Enter** to save any changes that you have made in the setup utility and exit the setup program. When the Save Settings and Exit dialog box appears, press **Y** to save the changes and exit, or press **N** to return to the setup main menu.

Exit Without Saving

Highlight this item and press **Enter** to discard any changes that you have made in the setup utility and exit the setup program. When the Exit Without Saving dialog box appears, press **Y** to discard changes and exit, or press **N** to return to the setup main menu.

SOFTWARE: GO!

Introduction

Once you have assembled your system, fine-tuned the setup utility, and installed your computer with an operating system, you can begin installing the support software that ships with this motherboard.

The support software is supplied on a CD-ROM. In the text below, it is assumed that the CD-ROM drive in your system is identified as drive D. Make the necessary changes to the text if your CD-ROM drive is identified as some other drive letter.

The CD-ROM has an installation program that runs automatically when you insert the CD-ROM into your CD-ROM drive. If the program doesn' t run, open the Windows Run command from the Start menu and browse to the file Q-LITY.EXE on the CD-ROM.

Using the Installation Program

The opening screen of the Installation program has five items as follows

Read Me First

Click on this item to display a README file that introduces all the software that is stored on this CD-ROM. Not all the software can be used with your particular motherboard.

Manual

The manual item has copies of various motherboard User Manuals stored in ****.PDF format. You need Adobe Acrobat reader to display PDF formatted documents. If you do not already have Acrobat Reader, you can install it by clicking on the Acrobat Reader item on the Installation program menu.

Drivers

This item lets you select the drivers that you need to install for the components that are integrated on your motherboard. See the following section for more details on installing the drivers for this motherboard.

Acrobat Reader

This item installs the Adobe Acrobat Reader so that you can read any documents using the ***.PDF format. Click this item and the installation program begins automatically.

Hardware Monitor

This item is not active. A README file recommends that you visit the manufacturer' s website to download hardware monitoring software.

Utility

This item lets you install utility programs that you might want to use to maintain your system, for example, a flash BIOS utility so that you can upgrade the BIOS when necessary. See the following section for notes on using the Utility items.

Notes on Using the Drivers Items

When you click on Drivers from the opening screen of the Installation program, the Drivers menu displays four items as shown below.

- **Audio Item**

This item installs audio drivers and software. Click on the Audio item and a sub-menu of two audio options is displayed.

Creative

If you have the CP810-M motherboard, use the Creative audio drivers. Click this option and the Creative installation program starts automatically. Follow the screen prompts until the installation is complete.

Crystal (Optional)

This option displays a README file that shows the pathname to folders that have the drivers and software for different Windows versions.

1. Take a note of the pathname for your version of Windows.
2. Open Windows Explorer and browse to the correct folder.
3. Read or print the README.TXT file in the folder and follow the instructions given there to install the audio drivers and software.

Note: *Your motherboard does not support the Crystal drivers so you can ignore this item.*

■ VGA Item

This item lets you install drivers and software for the graphics system integrated on your motherboard. Click on VGA, and then click on Intel 810. Three options appear representing three different operating systems:

- Wind 9x Driver
- NT 4.0 Driver
- Win 2000 Driver

Click on the option that represents the operating system on your computer and the installation program begins automatically.

■ Intel IDE NT4.0 Item

This item provides bus mastering Ultra DMA 66 drivers for IDE devices running on Windows NT 4.0 systems. If you are running Windows NT 4.0, click on this item to display a README file.

1. Take note of the pathname at the beginning of the file.
2. Read or print the installation instructions given in the file.
3. Exit the Installation program and use Windows Explorer to browse to the location of the NT 4.0 UDMA drivers.
4. Carry out the installation instructions given in the README file.

■ Intel INF Win9x Item

This item installs upgraded information files for Windows' registry so that the features of the Intel chipset are fully supported. The files add or enhance the following features:

- Core PCI and ISAPNP Services
- AGP Support
- IDE/ATA33/ATA66 Storage Support
- USB Support
- Identification of Intel Chipset Components in Device Manager

Only install this software if your system is running Windows 95/98 and you have at least 32 MB of system memory. When you click on this item, the installation program begins automatically.

Notes on Using the Utility Items

When you click on Utility from the opening screen of the Installation program, the Utility menu displays two items as shown below.

■ DirectX61 Item

This item installs DirectX drivers version 6.1 on systems that are running Windows 95 and 98. When you click on this item, the installation program begins automatically.

■ AMI Tools Item

This item has two utility programs.

Flash

This item displays a README file that explains how you can use the flash BIOS utility to flash an upgraded AMI BIOS to your system. Only use this item if your system is running an AMI BIOS. The

README file begins with a pathname to the flash file utility program. Use the utility program and follow the instructions in the README file if you need to flash an upgraded BIOS.

S4 HDD Prepare

If your system is running an operating system that supports ACPI (Advanced Configuration and Power Management Interface) you can prepare a hard disk so that it supports the S4 suspend mode. (In S4 the state of your system is saved to disk in suspend mode, so that when you resume, your system returns to the same state.)

When you click this item a README file appears with a pathname to the utility.